

ABSTRACT OF THE DISCLOSURE

A correlator of a present invention includes: a multiplier which multiply a received impulse train by a received template train; an analog integrator which integrates the result of the multiplication; a quantizer which quantizes the result of the integration; a digital integrator to which the result of the quantization is supplied; an adder provided on the input side of the analog integrator; and a negative feedback path which negatively feeds the result of the quantization back to the analog integrator via the adder. In this correlator, a quantization error arisen in the quantizer is negatively fed back to the analog integrator and integrated thereby, then quantized by the quantizer again. With this arrangement, it is possible to reduce the quantization error and improve a S/N ratio. The correlator is suitably adopted to a receiver for impulse radio.